Ref. No. 3534

ONKYO® SERVICE MANUAL

Integrated Stereo Amplifier
MODEL A-9911

Black, Silver and Golden color models

BUP/SUP	230V AC, 50Hz
BUW/GUW	120V/220V AC, 50Hz/60Hz
BUD/GUD	120V AC, 60Hz

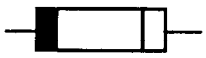
ONKYO®
AUDIO COMPONENTS

SPECIFICATIONS

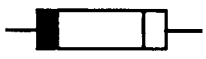
Power Output:	90 watts per channel, min. RMS, at 8 ohms, both channels driven from 20 Hz to 20 kHz, with no more than 0.06% Total harmonic distortion. 160 watts per channel, RMS, at 4 ohms, both channels driven at 1 kHz, with no more than 1% Total harmonic distortion. (DIN)
Dynamic Power:	283 watts at 2 ohms 185 watts at 4 ohms 108 watts at 8 ohms
Total Harmonic Distortion:	0.06% at rated power 0.06% at 1 watt output
Intermodulation Distortion:	0.06% at rated power
Damping Factor:	130 at 8 ohms (1 kHz)
Input Sensitivity / Impedance:	PHONO (MM) 3 mV / 47 kohms PHONO (MC) 300 µV / 100 ohms CD, TUNER, LINE, TAPE-PLAY (TONE) 300 mV / 25 kohms CD, TUNER, LINE, TAPE-PLAY (SOURCE) 450 mV / 25 kohms POWER AMP DIRECT 450 mV / 25 kohms
Output Level / Impedance:	TAPE-REC 300 mV / 1.5 kohms (PHONO)
Phono Overload:	MM: 1 kHz / 10 kHz at 0.05% THD 100 mV / 480 mV MC: 1 kHz / 10 kHz at 0.1 % THD 10 mV / 48 mV
Frequency Response:	CD, TUNER, LINE, TAPE-PLAY (SOURCE) 2 Hz — 50 kHz (+0, –1 dB) PHONO (MM) (RIAA Deviation) ±0.3 dB, 20 Hz — 20 kHz
Tone Control (Vol –22 dB):	TREBLE (Turnover: 7 kHz) ±10 dB at 20 kHz BASS (Turnover: 200 Hz) +15 / –6 dB at 20 Hz MIDBASS PRESENCE ±6 dB at 200 Hz / 300 Hz
Subsonic Filter:	15 Hz (12 dB / oct.)
High Cut Filter:	TREBLE min. 6 kHz (6 dB / oct.)
Attenuator:	–20 dB
Signal to Noise Ratio (IHF-A):	PHONO (MM) 5 mV input 87 dB PHONO (MC) 0.5 mV input 70 dB CD, TUNER, LINE, TAPE-PLAY (TONE) 105 dB CD, TUNER, LINE, TAPE-PLAY (SOURCE) 117 dB POWER AMP DIRECT 117 dB
Power Supply:	European & U.K & Australian models AC 230 V, 50 Hz U.S.A. & Canadian models AC 120 V, 60 Hz Worldwide models AC 120 V and AC 220-230 V switchable, 60 / 50 Hz
Dimensions (W × H × D):	435 × 165 × 444 mm 17-1/8″ × 6-1/2″ × 17-1/2″
Weight:	19.7 kg, 43.4 lbs.

SERVICE SAFETY PRECAUTIONS

1. Replacing the fuses



This symbol located near the fuse indicates that the fuse used is fast operating type. For continued protection against fire hazard, replace with same type fuse. For fuse rating refer to the marking adjacent to the symbol.



Ce symbole indique que le fusible utilise est a rapide.
Pour une protection permanents, n'utiliser que des fusibles de meme type.
Ce darnier est indique la qu le present symbol est appose.

Circuit No.	Part No.	Description
F901	252077	4A-SE-EAK <P><T>
	252154	8A-TSC <D><W>
F902	252070	1A-SE-EAK <P><T>
	252077	4A-SE-EAK <W>

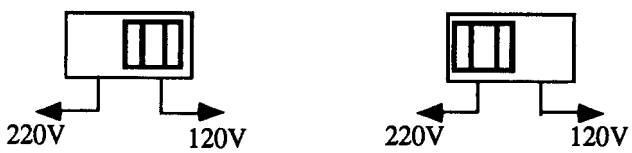
2. Safety-check out

(Only U.S.A. model)
After correcting the original service problem, perform the following safety check before releasing the set to the customer.
Connect the insulating-resistance tester between the plug of power supply cord and the screw on the back panel.
Specifications : 3.3Mohm±10% at 500V.

3. Voltage Selector (Rear Panel)

Worldwide models are equipped with a voltage selector to conform to local power supplied.
Be sure to set this switch to match the voltage of the power supply in your area before plugging in the unit.
Models without a voltage selector can only be used in area where the power supply is the same as that of the unit.

VOLTAGE SELECTOR



at AC 120V at AC 220V

Setting the voltage selector

1. Determine the proper for voltage for your area : 220V or 120V.
2. If the preset voltage is not proper for your area, insert a screwdriver into the groove in the switch. Slide the switch all the way to the right (120V) or to the left (220V), which-ever is proper.

ADJUSTMENT PROCEDURES

1. Preparations

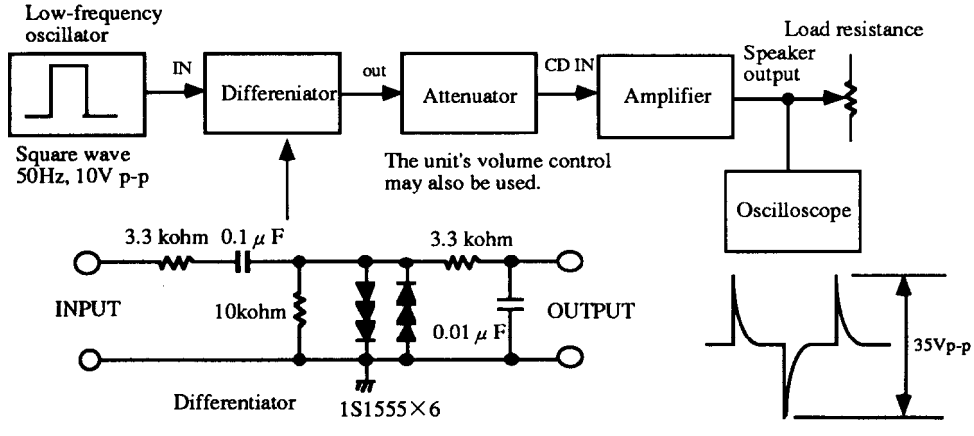
1) Place the unit on the workbench. (There should be about 15 mm of space between the base plate of the unit and the work surface.)
2) Set up the unit as follows.
   (1) No load
   (2) No signal
   (3) Volume turned all the way down
   (4) Speaker switch OFF
   (5) Power switch OFF
   Note) Check the following points before making adjustments
   (1) The power switch should be OFF.
   (2) The interior of the unit should not be warm.

2. Idling current adjustment

1) Turn the power switch ON and allow the unit to warm up for about 10 minutes.
   (1) Adjust R617(R618) so that the voltage at test point IID-ID P621(P622) on the NAAF-5536 circuit board is 6.5mV±2mV.
   NOTE) Semi-fixed resistors enclosed in parentheses ( ) are for the right channel.

3. Check of operation of protection circuitry

1) Check of operation of protection relay.
   (1) Confirm that the relay turns ON approximately 8 seconds after the power switch is turned ON.
   (2) The relay should turn OFF approximately 0.5 seconds after the power switch is turned OFF.
2) Check of DC detection
   (1) Turn the power on with no load.
   (2) After the speaker relay turns ON, apply DC +400 mV to the line input terminals. Confirm that the relay turns OFF.
   (3) Confirm that operation is the same as (2) above when an input of DC -400 mV is applied.
   Note) Under no circumstances connect a load or short the speaker terminals when performing the above test.
3) Confirmation of current detection operation
   (1) Signal input from the circuit illustrated below with no load.
   (2) Confirm that the speaker relay does not turn OFF even when a 2 ohm load is connected when a peak value of 35Vp-p is output.
   (3) Next, confirm that when a 1 ohm load is connected the speaker relay switches OFF and ON a couple of times and then stays OFF.
   Note) The period before that relay stays OFF should not last for more than 10 second. Relay OFF status can be canceled by switching the power OFF.

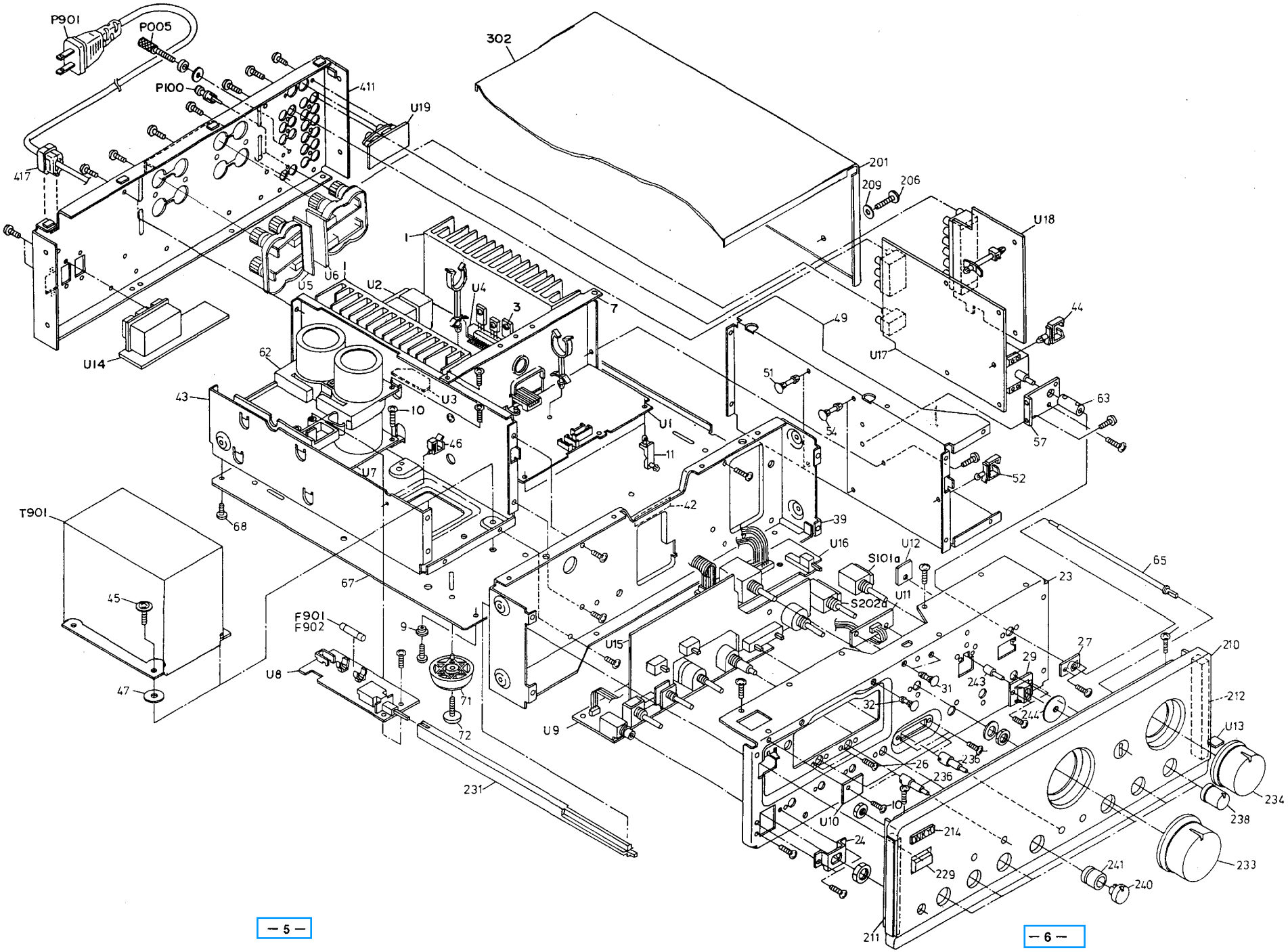


CHASSIS EXPLODED VIEW PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
1	27160363	Heat sink
3	801433	Self-tapping screw 3SMS8W.SW+14B(BC)
7	27130756B	Bracket (FH)
9	800529	Bushing
10	838130088	Self-tapping screw 3TTB+8B
11	27190966	Holder (PC)
23	27110889A	Front bracket
24	27141649	Retainer (HP)
26	838430107	Self-tapping screw 3TTB+10S(BC)
27	27267871	Guide (SEL)
29	27267878	Guide (D)
31	27190503A	Holder, KGLS-8RF
32	27190657	Holder, KGLS-18RF
39	27130758B	Bracket (SHLD)
42	28141319	Cushion, 5x15x30
43	27130759A	Bracket (PT)
44	27190608-1	Holder, UAMS-09-0
45	830440109	Self-tapping screw, 4TTC+10C(BC)
46	27190964	Holder (PT)
47	27270307	Spacer (PT) t=2
49	27130760	Bracket (R)
51	27190965	Holder, KGPS-12RF
52	27300833	Clamp, WS-2NS
54	27190266	Holder, KGLS-12RF
57	27141648	Retainer (INP)
62	27190962	Holder (CH)
63	27273156A	Joint (SEL)
65	27260336	Shaft (SEL)AS
67	27170307	Bottom Board
68	801525	Self-tapping screw 3TTB+8B(BC)
71	27175308B	Leg ass'y
72	837440169	Self-tapping screw 4TTT+16C(BC)
201	28184631	Top Cover <B>
	28184638	Top Cover <S>
	28184630	Top Cover <G>
206	838440089	Self-tapping screw 4TTB+8C(BC) <B>
	838240089	Self-tapping screw 4TTB+8C(NI) <S><G>
209	28170044A	Bushing (COV)
210	1A635121	Front Panel ass'y <B>
	1A636121	Front Panel ass'y <S>
	1A637121	Front Panel ass'y <G>
211	28125317	End Cap (L) <B>
	28125319	End Cap (L) <S>
	28125299A	End Cap (L) <G>
212	28125318	End Cap (R) <B>
	28125320	End Cap (R) <S>
	28125300A	End Cap (R) <G>
229	28325264	Knob (POW)AS <B>
	28325265	Knob (POW)AS <S>
	28325238	Knob (POW)AS <G>
231	27273160	Joint (POW)
233	28325284	Knob (VOL)AS <B>
	28325285	Knob (VOL)AS <S>
	28325182A	Knob (VOL)AS <G>
234	28325286	Knob (SEL)AS <B>
	28325287	Knob (SEL)AS <S>
	28325288	Knob (SEL)AS <G>
236	28325274	Knob (PUSH) <B>
	28325275	Knob (PUSH) <S>
	28325184A	Knob (PUSH) <G>
238	28325278	Knob (TONE)AS <B>
	28325279	Knob (TONE)AS <S>
	28325185B	Knob (TONE)AS <G>
240	28325280	Knob (T-1) <B>
	28325281	Knob (T-1) <S>
	28325186B	Knob (T-1) <G>
241	28325282	Knob (T-2) <B>
	28325283	Knob (T-2) <S>
	28325187A	Knob (T-2) <G>
243	28325193	Knob (D)
244	28141314	Cushion (D)
411	27122171	Rear Panel <B><G> <D>
	27122173	Rear Panel <B><G> <W>
	27122172	Rear Panel <B><S><G> <P><T>
417	27300750	⚠ Cord Bushing #2271
Q613, Q614	2202514 or	* 2SA1695-Y or
	2202516 or	* 2SA1695-P or
	2202513	* 2SA1695-O, Power transistor
Q615,Q616	2202524 or	* 2SC4468-Y or
	2202526 or	* 2SC4468-P or
	2202523	* 2SC4468-O, Power transistor
Q617,Q618	2202514 or	* 2SA1695-Y or
	2202516 or	* 2SA1695-P or
	2202513	* 2SA1695-O, Power transistor
Q619,Q620	2202524 or	* 2SC4468-Y or
	2202526 or	* 2SC4468-P or
	2202523	* 2SC4468-O, Power transistor
F901	252077	⚠ 4A-SE-EAK, Fuse <P><T>
	252154	⚠ 8A-TSC, Fuse <D><W>
F902	252070	⚠ 1A-SE-EAK, Fuse <P><T>
	252077	⚠ 4A-SE-EAK, Fuse <W>
P005	25060151	Terminal (GND)
P100	250153	P-0107, Short pin
P901	253192HIT	⚠ AS-UC-6#18, (SPT-2), AC Cord <D>
	253193HIT	⚠ AS-CEE, AC Cord <P>
	253198HIT	⚠ AS-BS, AC Cord <P>
	253193HIT	⚠ AS-CEE, AC Cord <T>
	253233KAW	⚠ AS-CEE-2, AC Cord <W>
S101	25030383A	NRSF-102-30BU, Rotary (Cartridge)
S202	25030384B	NRSF-106-30BU, Rotary (Rec. selector)
T901	2301165	NPT-1259DG, Power transformer <W>
	2301166	NPT-1259P, Power transformer <P><T>
	2301167	NPT-1259D, Power transformer <D>
U-1	1A635535-3A	NAAF-5535-3A, Main pc board ass'y <D>
	1A635535-3B	NAAF-5535-3B, Main pc board ass'y <P><T><W>
U-2	1A635536-3A	NAAF5536-3A, Power Amp. pc board ass'y <D>
	1A635536-3B	NAAF5536-3B, Power Amp. pc board ass'y <P><T><W>
U-3	1A635537-3A	NAETC-5537-3A, Driver L pc board ass'y <D>
	1A635537-3B	NAETC-5537-3B, Driver L pc board ass'y <P><T><W>
U-4	1A635537-3A	NAETC-5537-3A, Driver R pc board ass'y <D>
	1A635537-3B	NAETC-5537-3B, Driver R pc board ass'y <P><T><W>
U-5	1A635538-3A	NAETC-5538-3A, Speaker terminal L pc board ass'y <D>
	1A635538-3B	NAETC-5538-3B, Speaker terminal L pc board ass'y <P><T><W>
U-6	1A635541-3A	NAETC-5541-3A, Speaker terminal R pc board ass'y <D>
	1A635541-3B	NAETC-5541-3B, Speaker terminal R pc board ass'y <P><T><W>
U-7	1A635549-3A	NAPS-5549-3A, Power supply board ass'y <D>
	1A635549-3B	NAPS-5549-3B, Power supply board ass'y <P><T>
	1A635549-3C	NAPS-5549-3C, Power supply board ass'y <W>
U-8	1A635550-3A	NASW-5550-3A, Power switch pc board ass'y <D>
	1A635550-3B	NASW-5550-3B, Power switch pc board ass'y <P><T>
	1A635550-3C	NASW-5550-3C, Power switch pc board ass'y <W>
U-9	1A635552-3A	NAAF-5552-3A, Direct tone pc board ass'y <D>
	1A635552-3B	NAAF-5552-3B, Direct tone pc board ass'y <P><T>
	1A635552-3C	NAAF-5552-3C, Direct tone pc board ass'y <W>
U-10	1A635553-3A	NADIS-5553-3A, Power indicator pc board ass'y <D>
	1A635553-3B	NADIS-5553-3B, Power indicator pc board ass'y <P><T>
	1A635553-3C	NADIS-5553-3C, Power indicator pc board ass'y <W>
U-11	1A635554-3A	NADIS-5554-3A, Volume indicator pc board ass'y <D>
	1A635554-3B	NADIS-5554-3B, Volume indicator pc board ass'y <P><T>
	1A635554-3C	NADIS-5554-3C, Volume indicator pc board ass'y <W>
U-12	1A635555-3A	NADIS-5555-3A, Connector pc board ass'y <D>
	1A635555-3B	NADIS-5555-3B, Connector pc board ass'y <P><T>
	1A635555-3C	NADIS-5555-3C, Connector pc board ass'y <W>
U-13	1A635556-3A	NADIS-5556-3A, Input selector indicator pc board ass'y <D>
	1A635556-3B	NADIS-5556-3B, Input selector indicator pc board ass'y <P><T>
	1A635556-3C	NADIS-5556-3C, Input selector indicator pc board ass'y <W>
U-14	1A635551-3A	NAETC-5551-3A, AC outlet pc board ass'y <D><P><W>
	1A635551-3B	NAETC-5551-3B, AC outlet pc board ass'y <D><P><W>
	1A635551-3C	NAETC-5551-3C, AC outlet pc board ass'y <D><P><W>
U-15	1A635542-3A	NAAF-5542-3A, Tone control pc board ass'y <D><W>
	1A635542-3B	NAAF-5542-3B, Tone control pc board ass'y <P> <T>
U-16	1A635543-3A	NAAF-5543-3A, Volume pc board ass'y <D><W>
	1A635543-3B	NAAF-5543-3B, Volume pc board ass'y <P> <T>
U-17	1A635544-3A	NAAF-5544-3A, Equalizer pc board ass'y <D><W>
	1A635544-3B	NAAF-5544-3B, Equalizer pc board ass'y <P> <T>
U-18	1A635545-3A	NASW-5545-3A, Recording selector pc board ass'y <D><W>
	1A635545-3B	NASW-5545-3B, Recording selector pc board ass'y <P> <T>
U-19	1A635547-3A	NAETC-5547-3A, Direct CD pc board ass'y <D><W>
	1A635547-3B	NAETC-5547-3B, Direct CD pc board ass'y <P> <T>

NOTE: <S> Silver Color
<B> Black Color
<G> Golden Color
<D> U.S.A. and Canada model
<P> 230V model
<W> Worldwide model
<T> Taiwanese model

CHASSIS EXPLODED VIEW



PRINTED CIRCUIT BOARD PARTS LIST

U-1 MAIN PC BOARD (NAAF-5535)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q571,Q572	222570	NJM4560D-X
	Transistors	
Q501,Q502	2212805 or	2SK389-GR or
	2212806 or	2SK389-BL or
	2212807	2SK389-V
Q503-Q508	2211732 or	2SC1845-F or
	2211733	2SC1845-E
Q509,Q510	2211255	2SC1815-GR
Q511-Q516	2211455	2SA1015-GR
Q517,Q518	2213334	2SK373-Y
Q519-Q524	2211792 or	2SA992-F or
	2211793	2SA992-E
Q525,Q526	2211732 or	2SC1845-F or
	2211733	2SC1845-E
Q527-Q530	2211634	2SC2229-Y
Q531-Q534	2211354	2SA949-Y
Q971,Q972	2211945	2SK246-GR
Q973	2211255	2SC1815-GR
Q974	2211455	2SA1015-GR
Q975	2211863 or	2SB647-C or
	2215173	2SB647A-C
Q976	2211853 or	2SD667-C or
	2215163	2SD667A-C
	Diodes	
D971,D972	224472204	MTZJ22D, Zener
	Capacitors	
C501,C502	373631514	KP92-100V, 151J, Plastic
C507,C508	374491054	MKS92 63V, 105J, Plastic
C577-C580	393081007	CE04W50V, 10M, Elect.
C581-C584	393354717	CE04W25V, 470M, Elect.
C591-C594	393374717	CE04W63V, 470M, Elect.
C971,C972	393374717	CE04W63V, 470M, Elect.
C973,C974	393364707	CE04W35V, 47M, Elect.
	Resistors	
R527,R528	443522234	RS1/2WBJ, 22K, Metal oxide film
R529-R534	443528214	RS1/2WBJ, 820, Metal oxide film
R535,R536	443522714	RS1/2WBJ, 270, Metal oxide film
R537-R540	443525604	RS1/2WBJ, 56, Metal oxide film
R541,R542	443528214	RS1/2WBJ, 820, Metal oxide film
R543,R544	443528224	RS1/2WBJ, 8.2K, Metal oxide film
R545,R546	443522714	RS1/2WBJ, 270, Metal oxide film
R547-R550	443525604	RS1/2WBJ, 56, Metal oxide film
R565,R566	442521814	RS1/2WBJ, 180, Metal oxide film <D>
R591-594	453630564	RNU1WCJ, 5.6, Metal
R971-R974	443526814	RS1/2WBJ, 680, Metal oxide film
	Plugs	
P222a	25055134	NPLG-4P118
P231a	25055135	NPLG-5P119
P321a	25055138	NPLG-8P122
P331a	25055134	NPLG-4P118
P503a	25055715	NPLG-3P671
P504a	25055100	NPLG-3P84
P505	25055879	NPLG-10P835
	Socket	
P505a	25051566	NSCT-10P1353
	Terminal	
P506	25060061	1P-5

U-2 POWER AMP PC BOARD (NAAF-5536)

CIRCUIT NO.	PART NO.	DESCRIPTION
	IC	
Q851	222584	TA7317P
	Transistors	
Q603-Q606	2212654	2SC3421-Y
Q607,Q608	2212644	2SA1358-Y
Q621,Q622	2211792 or	2SA992-F or
	2211793	2SA992-E
Q623,Q624	2214984 or	2SC2631-R or
	2214985	2SC2631-S
	Diodes	
D851,D853	223163 or	1SS133 or
	223205 or	1SS270A or
	223222	WG713A
D854	224470623	MTZJ6.2C, Zener
D855	223163 or	1SS133 or
	223205 or	1SS270A or
	223222	WG713A
	Coils	
L601-L604	5597-45502	
	Capacitors	
C601,C602	393042217	CE04W16V, 220M, Elect.
C603,C604	374491044	MKS92 63V, 104J, Plastic
C605,C606	393054707	CE04W25V, 47M, Elect.
C607,C608	374491044	MKS92 63V, 104J, Plastic
C621-C624	374432234	MKS92 100V, 223J, Plastic
C637,C638	374434734	MKS92 100V, 473J, Plastic
C651-C654	393391007	CE04W100V, 10M, Elect.
C851	393322217	CE04W6.3V, 220M, Elect.
C852	393363307	CE04W35V, 33M, Elect.
C853	393384797	CE04W50V, 0.47M, Elect.
C855	393343317	CE04W16V, 330M, Elect.
C857,C858	374721044	ECQ-V50V, 104J, Plastic
	Resistors	
R609-612	443521004	RS1/2WBJ, 10, Metal oxide film
R613-R616	443521014	RS1/2WBJ, 100, Metal oxide film
R617,R618	5210255	N06HR, 200BC, Variable
R621-R624	443521504	RS1/2WBJ, 15, Metal oxide film
R625-R628	443521014	RS1/2WBJ, 100, Metal oxide film
R633-636	443523304	RS1/2WBJ, 33, Metal oxide film
R637-R640	443521004	RS1/2WBJ, 10, Metal oxide film
R641-R644	453532294	RNU1/2WCJ, 0.22, Metal
R651-R658	4000145	MPC78-2WK-0.1, Metal Plate
R683,R684	452830474	RNU3WCJ, 4.7, Metal
R691,R692	443623914	RS1WBJ, 390, Metal oxide film
	Plugs	
P621,P622	25055038	NPLG-2P29
P631,P632	25055872	NPLG-8P828
P753a,P754a	25055882	NPLG-3P838
P831a	25055132	NPLG-2P116
	Socket AS	
P503	2009990387	NSAS-6P0524
P504	2009990388	NSAS-6P0525
	Socket	
P631a	25051559	NSCT-8P1346
	Relays	
RL851,RL852	25065316	NRL-2P7A-DC12-043
RL853	25065469	NRL-2P1A-DC12-078
	27160357	Heat sink (S3)

U-3 DRIVER L PC BOARD (NAETC-5537)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors	
Q601	2212864	2SC3419-Y
Q609	2202684 or	* 2SA1859-Y or
	2202683	* 2SA1859-O
Q611	2202694 or	* 2SC4883-Y or
	2202693	* 2SC4883-O

U-4 DRIVER R PC BOARD (NAETC-5537)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors	
Q601	2212864	2SC3419-Y
Q609	2202684 or	* 2SA1859-Y or
	2202683	* 2SA1859-O

CIRCUIT NO.	PART NO.	DESCRIPTION
Q611	2202694 or	* 2SC4883-Y or
	2202693	* 2SC4883-O

U-5 SPEAKER TERMINAL L (NAETC-5538)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Terminal	
P653	25060237	NTM4PDMN159

U-6 SPEAKER TERMINAL R (NAETC-5541)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Terminal	
P654	25060237	NTM4PDMN159

U-7 POWER SUPPLY PC BOARD (NAPS-5549)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Diodes	
D921	22380270F	⚠ D5FB60
D922,D923	223208F	6A2
D931,D941	22380039	⚠ 1D4B42
	Capacitors	
C921,C922	3504262	CE62W63V, 15000M, Elect.
C923,C924	374503345S	ME93M125V, 334K, Plastic
C926	374501055S	ME93M125V, 105K, Plastic
C931,C932	374722235	ECQ-B50V, 223K, Plastic
C933	393341027S	CE04W16V, 1000M, Elect.
C941,C942	393381027S	CE04W50V, 1000M, Elect.
C943,C944	374722235	ECQ-B50V, 223K, Plastic
C945	374732234	ECQ-V100V, 223J, Plastic
	Resistors	
R921	443525604	RS1/2WBJ, 56, Metal oxide film
R941	453530104	RNU1/2WCJ, 1, Metal
R943,R944	453530104	RNU1/2WCJ, 1, Metal
	Plugs	
P906	25055675	NPLG-2P631
P921	25055167	NPLG-4P151
P931	25055165	NPLG-2P149
P941	25055166	NPLG-3P150
P961a	25055715	NPLG-3P671
	Socket AS	
P831	2009990374	NSAS-4P0511
P922	2009990371A	NSAS-12P0508

U-8 POWER SWITCH PC BOARD (NCSW-5550)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C901	3500191	⚠ DE7150F103M, IS C
C903	3500191	⚠ DE7150F103M, IS C <D>
	3500163	⚠ WY2472MCMCFOK, IS C <P><W>
C904	3500163	⚠ WY2472M, CMCFOK, IS C <W>
	Fuse holders	
F901a	25050065	YSH403T
F902a	25050065	YSH403T <P><W>
	Switch	
S901	25035614	⚠ NPS-121-L576P, Push (Power)
	Terminals	
P904	25060103	2P-10 <P>
	25060104	3P-10 <W>
P905	25065425	GND

U-9 DIRECT TONE PC BOARD (NCAF-5552)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors	
Q871	2211504	2SA950-Y
Q872	2213510	DTA114ES
	Diode	
D871	224470562	MTZJ5.6B, Zener
	Capacitors	
C331,C332	374721524	ECQ-B50V, 152J, Plastic
C333,C334	374431534	MKS92 100V, 153J, Plastic
C335,C336	374491544	MKS92 63V, 154J, Plastic
C337,C338	374432234	MKS92 100V, 223J, Plastic
	Resistors	
R331	5100001	N16RGMC100K 30F, Variable
R332	5144019	N16RQMC70K 88K30F, Variable
R479	5142016A	N16RGMC20KT 30F, Variable
	Plugs	
P401	25055703	NPLG-7P659
P431	25055411	NPLG-9P393
	Jack	
P871	25045337	HLJ4317-01-3120 (Phones)
	Switch	
S871	25030380	NRSF-125-30YW-S, Rotary (Speakers)

U-10 POWER INDICATOR PC BOARD (NADIS-5553)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Diodes	
D872	225324D or	SEL6910A-D, LED or
	225324C	SEL6910A-C, LED
D873	225321	SLR-342VR, LED

U-11 VOLUME INDICATOR PC BOARD (NADIS-5554)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Diode	
D801	225291D	SEL4910D-D, LED
	Capacitor	
C801	374724734	ECQ-V50V, 473J, Plastic

U-12 CONNECT PC BOARD (NADIS-5555)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C802	374724734	ECQ-V50V, 473J, Plastic
C871	374724734	ECQ-V50V, 473J, Plastic
	Plug	
P801a	25055183	NPLG-2P167

U-13 INPUT SELECTOR PC BOARD (NADIS-5556)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Diode	
D802	225324D or	SEL6910A-D, LED or
	225324C	SEL6910A-C, LED
	Socket AS	
P801	2009990384	NSAS-4P0521

U-14 AC OUTLET PC BOARD (NAETC-5551)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Switch	
S904	25065437	⚠ NSS-22157P, Slide (Voltage selector) <W>
	Sockets	
P903	25051121	⚠ NSCT-6P908, AC Outlet <D>
	25051572	NSCT-2P1359 <P>
	25051121	NSCT-6P908 <W>

U-15 TONE CONTROL PC BOARD (NAAF-5542)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transisors	
Q431,Q432	2211732 or	2SC1845-F or
	2211733	2SC1845-E
Q433,Q434	2211792 or	2SA992-F or
	2211793	2SA992-E
Q435,Q436	2211732 or	2SC1845-F or

CIRCUIT NO.	PART NO.	DESCRIPTION
	2211733	2SC1845-E
Q437-Q440	2211792 or	2SA992-F or
	2211793	2SA992-E
Q441-Q444	2211732 or	2SC1845-F or
	2211733	2SC1845-E
Q445-Q448	2211792 or	2SA992-F or
	2211793	2SA992-E
Q449,Q450	2211732 or	2SC1845-F or
	2211733	2SC1845-E
Q961	2202716 or	2SB1565-F or
	2202715	2SB1565-E
Q962	2202706 or	2SD2394-F or
	2202705	2SD2394-E
Q963,Q964	2211945	2SK246-GR
Q965	2211255	2SC1815-GR
Q966	2211455	2SA1015-GR
	Diodes	
D961,D962	224473004	MTZJ30D, Zener
	Capacitors	
C431,C432	391641017	CE04W16V, 100M, Elect.
C435,C436	393344707	CE04W16V, 47M, Elect.
C451,C452	391641007	CE04W16V, 10M, Elect.
C453-C456	374721544	ECQ-V50V, 154J, Plastic
C461-C464	393341007	CE04W16V, 10M, Elect.
C471,C472	374721544	ECQ-V50V, 154J, Plastic
C473,C474	374723324	ECQ-B50V, 332J, Plastic
C475,C476	374724734	ECQ-V50V, 473J, Plastic
C481,C482	391644707	CE04W16V, 47M, Elect.
C491,C494	393364717	CE04W35V, 470M, Elect.
C961,C962	393380477	CE04W50V, 4.7M, Elect.
C963,C964	393361027	CE04W35V, 1000M, Elect.
	Resistors	
R471-R474	442522204	RS1/2WBJ, 22, Metal oxide film
R489-R492	443526824	RS1/2WBJ, 6.8K, Metal oxide film
R961,R962	443523314	RS1/2WBJ, 330, Metal oxide film
R967,R968	443523314	RS1/2WBJ, 330, Metal oxide film
	Socket AS	
P191	2009990372	NSAS-6P0509
P961	2009990373	NSAS-6P0510
	Sockets	
P401a	25051232	NSCT-7P1022
P431a	25050677	NSCT-9P481
	Switches	
S401,S402	25035591	NPS-222-L553, Push (Attenuator, Mode)
S403	25030382	NRSF-1111-30SRM, Rotary (Balance)
S431,S481	25035584	NPS-122-L546, Push (Sub sonic, Frequency)
	27160211Y	RAD-68, Heat sink

U-16 VOLUME PC BOARD (NAAF-5543)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Resistor	
R321	5104331	N20DQL41C50K T25F, Variable (Volume)
	Socket AS	
P321	2009990377	NSAS-16P0514
P331	2009990376	NSAS-8P0513
	Switch	
S321	25040075	NLS-143-915-L048, Lever (Source direct)

U-17 EQUALIZER PC BOARD (NAAF-5544)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q109	222902	NJM5532D-D
Q191	222780153	78L15
Q192	222790153	79L15
	Transisors	
Q101-Q104	2212185 or	* 2SK170-GR or
	2212186	* 2SK170-BL

CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C101,C102	372121014S	ST09 50V, 101J, Plastic <D>
C101,C102	372122214S	ST09 50V, 221J, Plastic <P>
C103,C104	372121014	ST09 50V, 101J, Plastic
C105,C106	373302224	PP09 125V, 222J, Plastic
C107,C108	393354717	CE04W25V, 470M, Elect.
C109,C110	391654717	CE04W25V, 470M, Elect.
C111,C112	374724724	ECQ-B50V, 472J, Plastic
C113,C114	374721015	ECQ-B50V, 101K, Plastic
C115,C116	374721524	ECQ-B50V, 152J, Plastic
C117,C118	391680227	CE04W50V, 2.2M, Elect.
C119,C120	374722224	ECQ-B50V, 222J, Plastic
C151,C152	372121014S	ST09 50V, 101J, Plastic <P>
C153,C154	374724714S	ECQ-B50V, 471J, Plastic <P>
C191,C192	393361027S	CE04W35V, 1000M, Elect.
C195,C196	393354717	CE04W25V, 470M, Elect.
	Resistors	
R191,R192	443523304	RS1/2WBJ, 33, Metal oxide film
	Coils	
L101,L102	231133	NCH-1188 <P>
	Jacks	
P101	25045311	NPJ-2PDBL168
P201	25045468	NPJ-6PDBL286
	Socket AS	
P231	2009990385	NSAS-10P0522
	Plug	
P191a	25055234	NPLG-3P218
	Switches	
S101	25065399	NSS-43151, Slide (Cartridge)
S201	25030381	NRSM-227-20BA, Rotary (Input selector)

U-18 RECORDING SELECTOR PC BOARD (NASW-5545)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Jacks	
P251-P253	25045316	NPJ-4PDBL173
	Switch	
S251	25065398	NSS-66150, Slide (Rec. selector)

U-19 DIRECT PC BOARD (NAETC-5547)

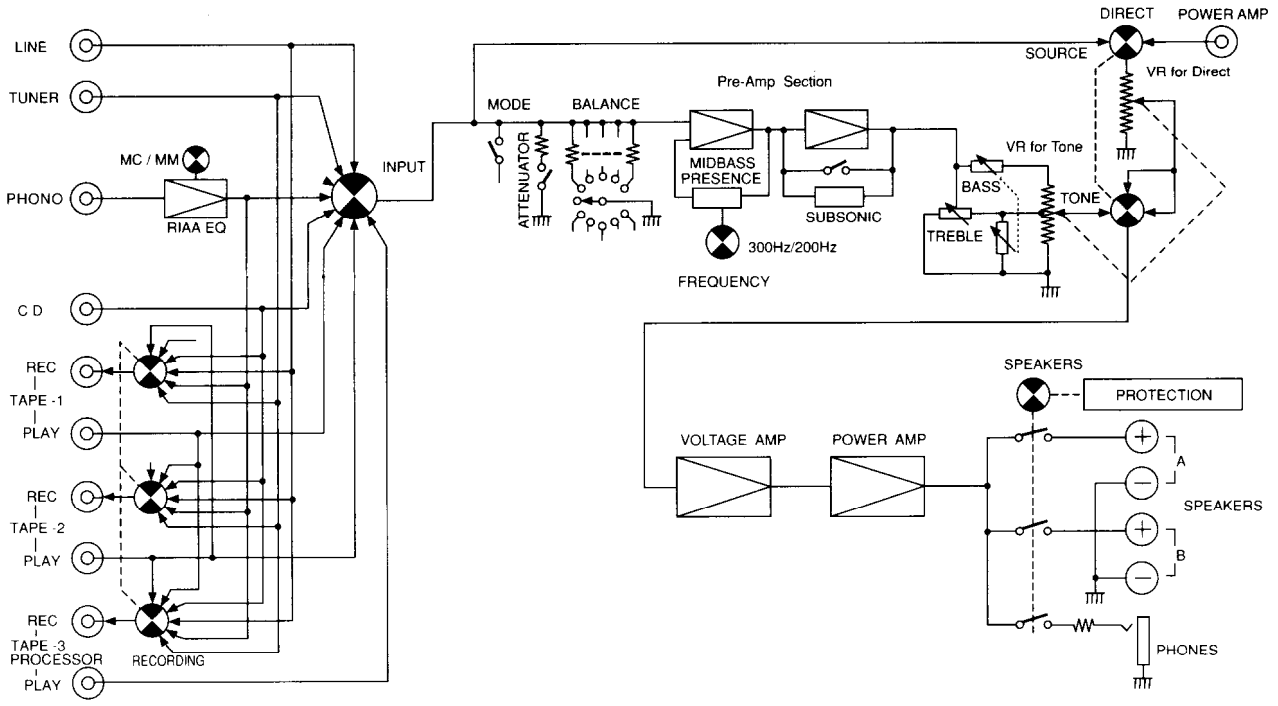
CIRCUIT NO.	PART NO.	DESCRIPTION
	Jack	
P211	25045161	NPJ-2PDBL58
	Socket AS	
P222	2009990375	NSAS-8P0512

NOTE: <S> Silver Color
<B> Black Color
<G> Golden Color
<D> U.S.A. and Canada model
<P> 230V model
<W> Worldwide model
<T> Taiwanese model

NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

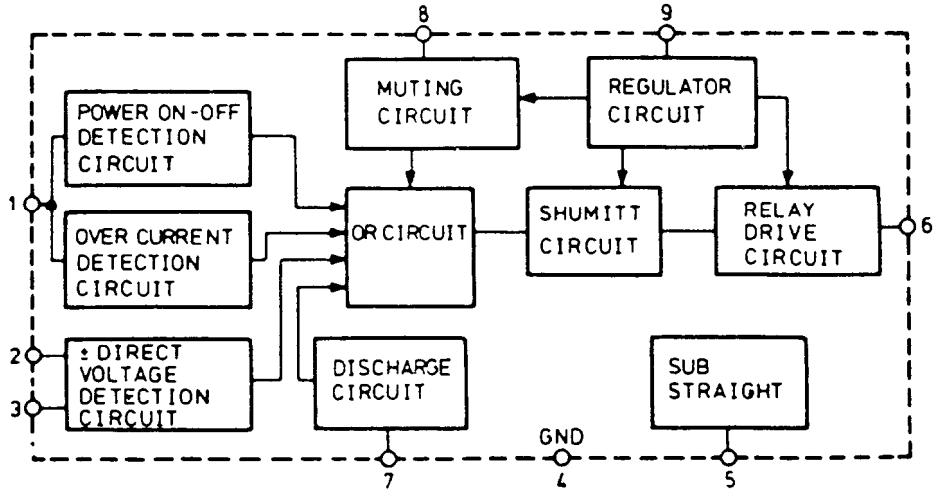
CAUTION: Replacement for transistor of mark * , if necessary must be made from the same beta group (HFE) as the original type.

BLOCK DIAGRAM

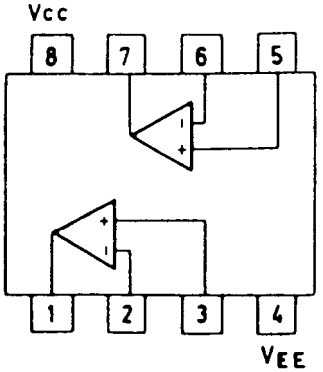


IC BLOCK DIAGRAMS

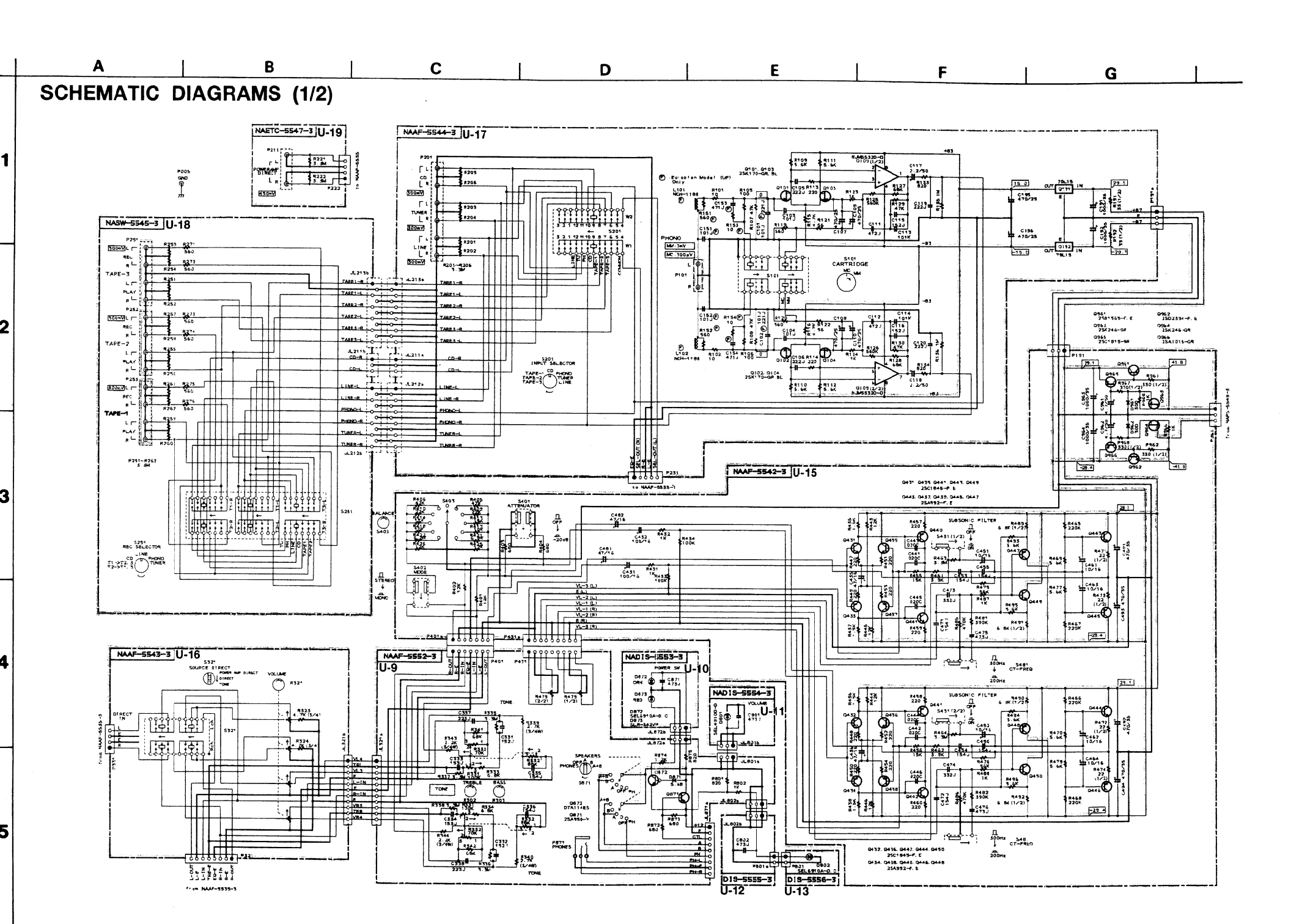
TA7317P (PROTECTIVE CIRCUIT)



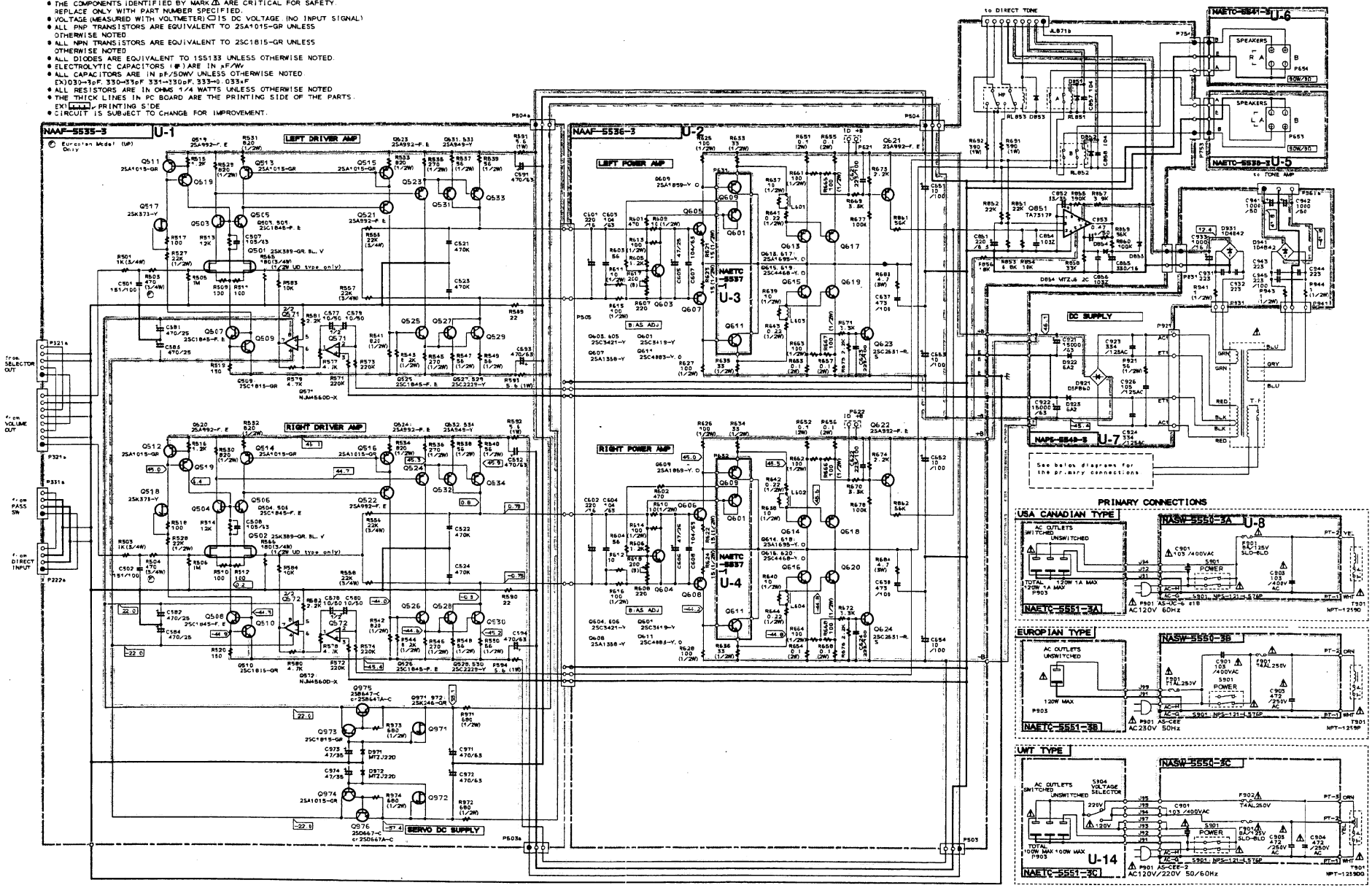
NJM4560DX (OPAmp)



SCHEMATIC DIAGRAMS (1/2)



SCHEMATIC DIAGRAMS (2/2)


NOTE
• THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR SAFETY. REPLACE ONLY WITH PART NUMBER SPECIFIED.
• VOLTAGE (MEASURED WITH VOLTMETER) ⊡ IS DC VOLTAGE. (NO INPUT SIGNAL)
• ALL PNP TRANSISTORS ARE EQUIVALENT TO 2SA1015-GR UNLESS OTHERWISE NOTED.
• ALL NPN TRANSISTORS ARE EQUIVALENT TO 2SC1815-GR UNLESS OTHERWISE NOTED.
• ALL DIODES ARE EQUIVALENT TO 1SS133 UNLESS OTHERWISE NOTED.
• ELECTROLYTIC CAPACITORS (■) ARE IN μF/W.
• ALL CAPACITORS ARE IN pF/50WV UNLESS OTHERWISE NOTED
EX) 030→3pF, 330→33pF, 331→330pF, 333→0.033μF
• ALL RESISTORS ARE IN OHMS 1/4 WATTS UNLESS OTHERWISE NOTED.
• THE THICK LINES IN PC BOARD ARE THE PRINTING SIDE OF THE PARTS.
EX) PRINTING SIDE
• CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.
NAAF-5535-3 U-1
NAAF-5536-3 U-2
NAETC-5537 U-3
NAETC-5537 U-4
NAETC-5538-3 U-5
NAETC-5541-3 U-6
NAPE-5548-3 U-7
NASW-5550-3A U-8
NASW-5550-3B
NASW-5550-3C
U-14
LEFT DRIVER AMP
RIGHT DRIVER AMP
LEFT POWER AMP
RIGHT POWER AMP
SERVO DC SUPPLY
DC SUPPLY
BIAS ADJ
SPEAKERS
to DIRECT TONE
to TONE AMP
from SELECTOR OUT
from VOLUME OUT
from PASS SW
from DIRECT INPUT
See below diagrams for the primary connections
PRIMARY CONNECTIONS
USA CANADIAN TYPE
EUROPIAN TYPE
UNT TYPE
NAETC-5551-3A
NAETC-5551-3B
NAETC-5551-3C
AC120V 60Hz
AC230V 50Hz
AC120V/220V 50/60Hz

PACKING PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
601	29052966	Carton Box <B>
	29052967	Carton Box <S>
	29052968	Carton Box <G>
602	29360404	SN Sheet
603	29091425E	Pad (L)
604	29091426F	Pad (R)
605	29091731	Pad (SP)
607	261504	Paper Tape W=30
613	29100035A	Poly Bag
614	282301	Staple
615	29110071	PP Tape W=50
	29100097-1AY	Poly Bag 350x250
	29355133A	Insert Sheet (DBP) <B><S> <P>
	29361934	UPC Label <B> <D>
	29361946	UPC Label <G> <D>
	29358002K	SS List <D>
	29365019B	Warranty Card <D>
	29342259A	Instruction manual, E <D>
	29342260	Instruction manual, U6 <P>
	29342262	Instruction manual, T <W><T>
	25055018	⚠ CV-K-1, CV Plug <W>

NOTE: <S> Silver Color
<B> Black Color
<G> Golden Color
<D> U.S.A. and Canada model
<P> 230V model
<W> Worldwide model
<T> Taiwanese model